# Appendix D: Glossary of Terms

# A

**accretion:** The gradual build-up of sediment along the bank or shore of a river or stream.

**acid deposition:** A complex chemical and atmospheric phenomenon that occurs when emissions of sulfur and nitrogen compounds are transformed by chemical processes in the atmosphere and then deposited on earth in either wet or dry form. The wet forms, often called "acid rain," can fall to earth as rain, snow, or fog. The dry forms are acidic gases or particulate matter.

**adipose tissue:** Fatty tissue.

**advisory:** A nonregulatory document that communicates risk information to those who may have to make risk management decisions. (EPA, December 1997)

**aerosol:** 1. Small droplets or particles suspended in the atmosphere, typically containing sulfur. They are emitted naturally (e.g., in volcanic eruptions) and as a result of human activities (e.g. burning fossil fuels). 2. The pressurized gas used to propel substances out of a container. (EPA, December 1997)

**agricultural waste:** Byproducts generated by the rearing of animals and the production and harvest of crops or trees. Animal waste, a large component of agricultural waste, includes waste (e.g., feed waste, bedding and litter, and feedlot and paddock runoff) from livestock, dairy, and other animal-related agricultural and farming practices.

**air pollutant:** Any substance in air that could, in high enough concentration, harm man, other animals, vegetation, or material. Pollutants may include almost any natural or artificial composition of airborne matter capable of being airborne. They may be in the form of solid particles, liquid droplets, gases, or in combination thereof. Generally, they fall into two main groups: (1) those emitted directly from identifiable sources and (2) those produced in the air by interaction between two or more primary pollutants, or by reaction with normal atmospheric constituents, with or without photoactivation. Exclusive of pollen, fog, and dust, which are of natural origin, about 100 contaminants have been identified. Air pollutants are often grouped in categories for ease in classification; some of he categories are: solids, sulfur compounds, volatile organic compounds, particulate matter, nitrogen compounds, oxygen compounds, halogen compounds, radioactive compounds, and odors. (EPA, December 1997)

**air pollution:** The presence of contaminants or pollutant substances in the air that interfere with human health or welfare or produce other harmful environmental effects. (EPA, December 1997)

**air quality criteria:** The levels of pollution and lengths of exposure above which harmful health and welfare effects may occur. (EPA, December 1997)

**air quality standards:** The level of pollutants prescribed by regulations that are not to be exceeded during a given time in a defined area. (EPA, December 1997)

**air toxics:** Air pollutants that cause or may cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental and ecological effects. Examples of toxic air pollutants include benzene, found in gasoline; perchloroethylene, emitted from some dry cleaning facilities; and methylene chloride, used as a solvent by a number of industries.

**algal blooms:** Sudden spurts of algal growth, which can degrade water quality and indicate potentially hazardous changes in local water chemistry. (EPA, December 1997)

**ambient air:** Any unconfined portion of the atmosphere; open air, surrounding air. (EPA, December 1997)

**ambient air quality standards:** See *criteria pollutants* and *National Ambient Air Quality Standards*.

**animal waste:** Byproducts that result from livestock, diary, and other animal-related agricultural practices.

**anthropogenic:** Originating from humans, not naturally occurring. (EPA, MAIA, August 2002)

**aquatic ecosystems:** Salt water or fresh water ecosystems, includes rivers, streams, lakes, wetlands, estuaries and coral reefs.

**aquifer:** An underground geological formation, or group of formations, containing water; source of ground water for wells and springs. (USGS, 1996)

**arsenic:** A silvery, nonmetallic element that occurs naturally in rocks and soil, water, air, and plants and animals. It can be released into the environment through natural activities such as volcanic action, erosion of rocks, and forest fires or through human actions. Approximately 90 percent of industrial arsenic in the U.S. is used as a wood preservative, but arsenic is also used in paints, dyes, metals, drugs, soaps, and semiconductors. Agricultural applications (used in rodent poisons and some herbicides), mining, and smelting also contribute to arsenic releases in the environment. It is a known human carcinogen.

**arteriosclerosis:** Hardening of the arteries.

**asbestos:** Naturally occurring strong, flexible fibers that can be separated into thin threads and woven. These fibers resist heat and

chemicals and do not conduct electricity. Asbestos is used for insulation, making automobile brake and clutch parts, and many other products. These fibers break easily and form a dust composed of tiny particles that are light and sticky. When inhaled or swallowed they can cause health problems. (NCI, 2001)

**assemblage:** The association of interacting populations of organisms in a selected habitat.

# B

**basal cell carcinoma:** A type of skin cancer, usually curable if treated in time.

**beach day:** A day that a beach would normally be open to the public.

**benthic:** Occurring at or near the bottom of a body of water.

**benthic organisms:** The worms, clams, crustaceans, and other organisms that live at the bottom of the estuaries and the sea.

**benthos:** In fresh water and marine ecosystems, organisms attached to, resting on, or burrowed into bottom sediments.

**bioaccumulation:** A process whereby chemicals (e.g., DDT, PCBs) are retained by plants and animals and increase in concentration over time. Uptake can occur through feeding or direct absorption from water or sediments. (EPA, MAIA, August 2002)

**biodiversity:** The variety and variability among living organisms and the ecological complexes in which they occur. Diversity can be defined as the number of different items and their relative frequencies. The term encompasses three basic levels of biodiversity: ecosystems, species, and genes.

**biological diversity:** See *biodiversity*.

**biomarker:** 1. A parameter that can be used to identify a toxic effect in an individual organism and can be used in extrapolation between species. 2. An indicator signaling an event or condition in a biological system or sample and giving a measure of exposure, effect, or susceptibility. (International Union of Pure and Applied Chemistry, 1993)

**biomass:** All of the living material in a given area; often refers to vegetation. (EPA, December 1997)

**biomonitoring:** Use of a living organism or biological entity as a detector and its response as a measure to determine environmental conditions. Ambient biological surveys and toxicity tests are common biological monitoring methods.

**biotic:** Refers to living organisms.

**biotic condition:** The state of living things.

**biotic integrity:** The ability to support and maintain balanced, integrated functionality in the natural habitat of a given region.

**body burden:** The amount of various contaminants retained in a person's tissues.

**bog:** A type of wetland that accumulates appreciable peat deposits. Bogs depend primarily on precipitation for their water source and are usually acidic and rich in plant residue, with a conspicuous mat of living green moss. (EPA, December 1997)

**brownfield:** Real property, the expansion, redevelopment or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.

# C

**cadmium:** A metal found in natural deposits as ores containing other elements. The greatest use of cadmium is primarily for metal plating and coating operations, including transportation equipment, machinery and baking enamels, photography, and television phosphors. It is also used in nickel-cadmium and solar batteries and in pigments. (EPA, OGWDW, September 2002)

**carcinogen:** An agent that causes cancer.

**cerebrovascular disease:** A category of diseases, including stroke, related to blood vessels supplying the brain.

**chlorination:** The application of chlorine to drinking water, sewage, or industrial waste to disinfect or to oxidize undesirable compounds. (EPA, December 1997)

**chlorine:** A greenish-yellow gas that is slightly soluble in water. Chlorine is often used in disinfection of water and treatment of sewage effluent as well as in the manufacture of products such as antifreeze, rubber, and cleaning agents.

**chromium:** A heavy metal that occurs naturally in rocks, plants, soil, and volcanic dust and gases. It is tasteless and odorless. It can damage living things at low concentrations and tends to accumulate in the food chain.

**chronic exposure:** Multiple exposures occurring over an extended period of time or over a significant fraction of an animal's or human's lifetime (usually seven years to a lifetime). (EPA, December 1997)

**Class I area:** Under the Clean Air Act, a Class I area is one in which visibility is protected more stringently than under the national ambient air quality standards; includes national parks, wilderness areas, monuments, and other areas of special national and cultural significance. (EPA, December 1997)

**cleanup:** Action taken to deal with a release or threat of release of a hazardous substance that could affect humans, the environment, or both. The term "cleanup" is sometimes used interchangeably with the terms "remedial action," "removal action," "response action," or "corrective action."

**coastal and ocean ecosystem:** An ecosystem that consists primarily of estuaries and ocean waters under U.S. jurisdiction. U.S. waters extend to the boundaries of the U.S. Exclusive Economic Zone, 200 miles from the U.S. coast. (The Heinz Center, 2002) (This report focuses on waters within 25 miles of the coast.)

**coastal wetland:** Ecosystem generally found along the Atlantic, Pacific, Alaskan, and Gulf coasts and closely linked to the nation's estuaries, where sea water mixes with fresh water to form an environment of varying salinities. The plants in coastal wetlands have adapted to changing fluctuating water levels and salinities to create tidal salt marshes, mangrove swamps, and tidal fresh water wetlands, which form beyond the upper edges of tidal salt marshes where the influence of salt water ends. Fresh water coastal wetlands can also be found adjacent to the Great Lakes.

**community water system:** A public water system that serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents. (EPA, December 1997)

**composting:** The controlled biological decomposition of organic material in the presence of air to form a humus-like material. Controlled methods of composting include mechanical mixing and aerating, ventilating the materials by dropping them through a vertical series of aerated chambers, and placing the them in piles out in the open air and mixing it or turning it periodically.

**congenital anomalies:** Birth defects.

**construction and demolition debris:** Waste generated during building, renovation, and wrecking projects. This type of waste generally consists of materials such as wood, concrete, steel, brick, and gypsum.

**contaminant:** Any physical, chemical, biological, or radiological substance or matter that has an adverse effect on air, water, or soil. (EPA, December 1997)

**contaminated land:** Ground that has been polluted with hazardous materials and requires cleanup or remediation. Contaminated sites may contain both polluted objects (e.g., buildings, machinery) and land (e.g. soil, sediments, and plants).

**contaminated media:** Materials such as soil, sediment, water, and sludge that are polluted at levels requiring cleanup or further assessment.

**contamination:** Introduction into water, air, or soil of microorganisms, chemicals, toxic substances, wastes, or waste water in a concentration that makes the medium unfit for its next intended use. Also applies to surfaces of objects, buildings, and various household and agricultural use products. (EPA, December 1997)

**conterminous:** Enclosed within one common boundary (e.g., the 48 *conterminous* states).

**cotinine:** A breakdown product (*metabolite*) of nicotine that can be measured in urine.

**criteria air pollutants:** A group of six widespread and common air pollutants regulated by the EPA on the basis of standards set to protect public health or environmental effects of pollution. These six criteria pollutants are carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter, and sulfur dioxide.

**cropland:** A National Resources Inventory land cover/use category that includes areas used for the production of adapted crops for harvest. Two subcategories of cropland are recognized: cultivated and noncultivated. Cultivated cropland comprises land in row crops or close-grown crops and also other cultivated cropland, for example, hayland or pastureland that is in a rotation with row or close-grown crops. Noncultivated cropland includes permanent hayland and horticultural cropland. (USDA, NRCS, 2000)

# D

**depuration:** The process of reducing the number of pathogenic organisms that may be present in shellfish by using a controlled aquatic environment as the treatment process. (FDA, 2000)

**dermal absorption:** The process by which a chemical penetrates the skin and enters the body as an internal dose. (EPA, December 1997)

**designated uses:** Those water uses identified in state water quality standards that must be achieved and maintained as required under the Clean Water Act. Uses can include fishing, shellfish harvesting, public water supply, swimming, boating, and irrigation. (EPA, December 1997)

**developed land:** A combination of National Resource Inventory land cover/use categories: large urban and built-up areas, small built-up areas, and rural transportation land. (USDA, NRCS, 2000)

**dioxin:** A group of chemically similar compounds, known chemically as dibenzo-p-dioxins, that are created inadvertently during combustion, chlorine bleaching of pulp and paper, and some types of chemical manufacturing. Tests on laboratory animals indicate that it is one of the more toxic anthropogenic (manmade) compounds.

**disinfection byproduct:** A compound formed by the reaction of a disinfectant such as chlorine with organic material in the water supply; a chemical byproduct of the disinfection process. (EPA, December 1997)

**Dobson unit (DU):** A measurement of ozone in the atmosphere. If, for example, 100 DU of ozone were brought to earth's surface, they would form a layer one millimeter thick. (EPA, December 1997)

**dose:** 1. The actual quantity of a chemical administered to an organism or to which it is exposed. 2. The amount of a substance that reaches a specific tissue (e.g., the liver). 3. The amount of a substance available for interaction with metabolic processes after crossing the outer boundary of an organism. (EPA, December 1997)

**dry deposition:** The settling of gases and particles out of the atmosphere. Dry deposition is a type of acid deposition, more commonly referred to as "acid rain." (EPA, Clean Air Markets Division, October 2002).

# E

**ecological indicators:** Measurable characteristics related to the structure, composition, or functioning of ecological systems (EPA, SAB, 2002); a measure, an index of measures, or a model that characterizes an ecosystem or one of its critical components (Jackson et.al, 2000); any expression of the environment that quantitatively estimates the condition of ecological resources, the magnitude of stress, the exposure of biological components to stress, or the amount of change in condition. (Barber, 1994)

**ecological processes:** The metabolic functions of ecosystems—energy flow, elemental cycling, and the production, consumption, and decomposition of organic matter, (EPA, SAB, 2002)

**ecology:** The study of the structure and function of nature; the totality of relations between organisms and their environment. (Odum, 1971)

**ecoregions:** Areas within which ecosystems with similar characteristics are likely to occur with predictable patterns; variables include such things as landform, vegetation, soils, and fauna.

**ecosystem:** 1. The interacting system of a biological community and its nonliving environmental surroundings. 2. A geographic area including all living organisms (people, plants, animals, and microorganisms), their physical surroundings (such as soil, water and air), and the natural cycles that sustain them.

**ecotone:** A habitat created by the juxtaposition of distinctly different habitats; an edge habitat; or an ecological zone or boundary where two or more ecosystems meet. (EPA, December 1997)

**emissions standard:** The maximum amount of air-polluting discharge legally allowed from a single source, mobile or stationary. (EPA, December 1997)

**endangered species:** Animals, birds, fish, plants, or other living organisms threatened with extinction by anthropogenic (human-caused) or natural changes in their environment. Requirements for declaring a species "endangered" are contained in the Endangered Species Act. (EPA, December 1997)

**endocrine disruptors:** Chemicals that interfere with the endocrine systems, leading to adverse effects. Some chemicals do this by binding to receptors, such as the estrogen and androgen receptors.

**endocrine system:** The components of the body that produce hormones that regulate reproductive and developmental functions. Major endocrine glands include the pituitary, thyroid, adrenal glands, testes, and ovaries.

**enrichment:** The addition of nutrients (e.g. nitrogen, phosphorus, carbon compounds) from sewage effluent, agricultural or urban runoff, or other sources to surface water. Enrichment greatly increases the growth potential for algae and other aquatic plants. (EPA, December 1997)

**environmental burden of disease:** The proportion of diseases, disability, and injury caused by factors in the environment: chemical pollutants, infectious microorganisms, and radiation.

**environmental exposure:** Human exposure to pollutants in their surroundings. Low-level chronic exposure to pollutants is one of the most common forms of environmental exposure (see threshold level). (EPA, December 1997)

**environmental indicators:** Scientific measurements that help measure over time the state of air, water, and land resources, pressures on those resources, and resulting effects on ecological and human health. Indicators show progress in making the air cleaner and the water purer and in protecting land.

**environmental risk:** The potential for adverse effects on living organisms associated with pollution of the environment by effluents, emissions, wastes, or accidental chemical releases; energy use, or the depletion of natural resources. (EPA, December 1997)

**environmental risk factor:** An exposure to something in the environment that, based on evidence, is known to be associated with health-related conditions and considered important to prevent. (Green, 1999)

**environmental tobacco smoke:** A mixture of smoke exhaled by a smoker and the smoke from the burning end of a smoker's cigarette, pipe, or cigar. Also known as second hand smoke.

**epidemiology:** The study of how diseases occur in a population or area.

**epiphyte:** A plant, fungus, or microbe sustained entirely by nutrients and water received, by means other than a parasite, from within the canopy in which it resides. (Moffett, 2000)

**erosion:** The wearing away of land surface by wind or water, intensified by land-clearing practices related to farming, residential or industrial development, road building, or logging. (EPA, December 1997)

**estuaries:** Partially enclosed bodies of water (this term includes bays, sounds, lagoons, and fjords); they are generally considered to begin at the upper end of tidal or saltwater influence and end where they meet the ocean. (The Heinz Center, 2002)

**eutrophic:** Pertaining to a lake or other body of water characterized by large nutrient concentrations, resulting in high productivity of algae.

**eutrophication:** The slow aging process during which a lake, estuary, or bay evolves into a bog or marsh and eventually disappears. During the later stages of this process, the water body is choked by abundant plant life that result from higher levels of nutritive compounds such as nitrogen and phosphorus. Human activities can accelerate the process. (EPA, December 1997)

**exotic species:** A species that is not indigenous to a region. (EPA, December 1997)

**exposure:** The amount of radiation or pollutant present in a given environment that represents a potential health threat to living organisms. (EPA, December 1997)

**exposure pathway:** The path from sources of pollutants via, soil, water, or food to humans and other species. (EPA, December 1997)

**exposure route:** The way a chemical or pollutant enters an organism after contact; i.e. by ingestion, inhalation, or dermal absorption. (EPA, December 1997)

**extraction waste:** Byproducts produced as a result of mining practices.

# F

**farmlands:** Include both croplands-lands used for production of annual and perennial crops and livestock-and surrounding landscape, such as field borders and windbreaks, small woodlots, grassland or shrubland areas, wetlands, farmsteads, small villages and other built-up areas, and similar areas within and adjacent to croplands. (The Heinz Center, 2002)

**fauna:** Animal life.

**fertilizers:** Supplements to improve plant growth that are commonly used on agricultural lands, as well as in urban, industrial, and residential settings.

**fish kill:** A large-scale die-off of fish caused by factors such as pollution, noxious algae, harmful bacteria, and hypoxic conditions.

**floodplain:** Any land area susceptible to being inundated by water from any source.

**flora:** Plant or bacterial life.

**forage:** Food for animals especially when taken by browsing or grazing.

**forests:** Lands at least 10 percent covered by trees of any size, at least one acre in extent. This includes areas in which trees are intermingled with other cover, such as chaparral and pinyon, juniper areas in the Southwest, and both naturally regenerating forests and areas planted for future harvest (plantations or "tree farms"). (The Heinz Center, 2002)

**forest fragmentation:** The division of a formerly healthy forest into patches, usually as a result of conversion to agricultural or residential land. (EPA, August 2002)

**forest land:** Land that is at least 10 percent stocked by forest trees of any size, including land that formerly had tree cover and that will be naturally or artificially regenerated. The minimum area for classification of forest land is one acre. (USDA, Forest Service, April 2001)

**fresh water systems:** Include:

- Rivers and streams, including those that flow only part of the year
- Lakes, ponds, and reservoirs, from small farm ponds to the Great Lakes
- Ground water, which is often directly connected to rivers, streams, lakes, and wetlands
- Fresh water wetlands, including forested, shrub, and emergent wetlands (marshes), and open water ponds
- Riparian areas–they usually vegetated margins of streams and rivers (although this term can also apply to lake margins). (The Heinz Center, 2002)

## G

**geomorphology:** The scientific study of the nature and origin of the landforms on the surface of earth and other planets.

**giardiasis:** The illness resulting from infection of the gastrointestinal tract with Giardia lamblia. The symptoms of giardiasis include gastric pain, fatigue, extreme diarrhea, fever, chills, and nausea. The most acute symptoms typically last only a few days (Garcia, 1999).

**global burden of disease:** The overall impact of disease related to all causes. It takes into account the burden represented by years of life lived with illness or disability.

**grasslands and shrublands:** Lands in which the dominant vegetation is grasses and other nonwoody vegetation, or where shrubs (with or without scattered trees) are the norm (also called rangelands); includes bare-rock deserts, alpine meadows, arctic tundra, pastures, and haylands (an overlap with the farmland system). Less-managed pastures and haylands fit well within the grassland/shrubland system; more heavily managed ones fit well as part of the farmlands system. (The Heinz Center, 2002)

**gross primary production:** Total energy captured in units of carbon gain.

**ground-level ozone:** See ozone.

**ground water:** Subsurface water that occurs beneath the water table in soils and geologic formations that are fully saturated.

## H

**habitat:** The place where a population (e.g., human, animal, plant, microorganism) lives and its surroundings, both living and nonliving. (EPA, December 1997)

**habitat fragmentation:** The division of large areas of natural habitat into smaller sections through conversion of the natural habitat to other uses (e.g., roads, development), resulting in populations of plants and animals becoming isolated from each other and potentially threatening their survival.

**habitat loss:** The destruction of habitat by natural disasters (hurricanes, fires, flooding, etc.) and human activity (clearing land for agricultural, industrial, and residential development; clear-cut harvesting of timber; oil spills; and war).

**halogens:** Compounds that contain atoms of chlorine, bromine, or fluorine.

**hardwood:** The wood of an angiospermous tree as distinguished from that of a coniferous tree; a tree that yields hardwood.

**hazardous waste:** Byproducts of society that can pose a substantial or potential threat to human health or the environment when improperly managed. Hazardous waste possesses at least one of four characteristics: ignitability, corrosivity, reactivity, or toxicity.

**health outcomes:** An outcome measured by the quality of life, likelihood of disease, life expectancy, and overall health of individuals or communities. (HIC, 2000-2001)

**heavy metals:** Metallic elements with high atomic weights (e.g., mercury, chromium, cadmium, arsenic, lead); can damage living things at low concentrations and tend to accumulate in the food chain. (EPA, December 1997)

**herbicide:** A form of pesticide used to control weeds that limit or inhibit the growth of the desired crop.

**high-level radioactive waste:** Highly radioactive waste material from the chemical processing of spent fuel. It includes spent fuel, liquid waste, and highly radioactive solid waste from the liquid. High-level radioactive waste contains elements that decay very slowly and remain radioactive for thousands of years. (DOE, 1997)

**household hazardous waste:** Hazardous products used and disposed of by residential rather than industrial consumers. It includes paints, stains, varnishes, solvents, pesticides, and other materials or products containing volatile chemicals that can catch fire, react, or explode, or are corrosive or toxic.

**human exposure to contaminants:** The contact of a chemical contacting and the outer boundary of a human. (EPA, ORD, March 1998)

**hydrologic cycle:** Movement or exchange of water between the atmosphere and earth. (EPA, December 1997)

**hydrologic unit code (HUC):** An eight-digit code that is used to classify watersheds in the U.S. This code uniquely identifies each of four levels of watershed classification within four two-digit fields. The first two digits of the code identify the water-resources region; the first four digits identify the sub-region; the first six digits identify the accounting unit; and the final two digits identify the cataloging unit. For example, in hydrologic unit code (HUC) 01080204, 01 identifies the region; 0108 identifies the sub-region; 010802 identifies the accounting unit; and 01080204 identifies the cataloging unit.

**hydrology:** The geology of ground water, with particular emphasis on the chemistry and movement of water. (EPA, December 1997)

**hypertrophic:** Pertaining to a lake or other body of water characterized by excessive nutrient concentrations, resulting high productivity.

**hypoxia/hypoxic waters:** Waters with low levels of dissolved oxygen concentrations, typically less than two ppm, the level generally accepted as the minimum required for most marine life to survive and reproduce. (EPA, December 1997).

## I

**impervious surface:** A hard surface area that either prevents or retards the entry of water into the soil mantle or causes water to run off the surface in greater quantities or at an increased rate of flow. Common impervious surfaces include, but are not limited to, rooftops, walkways, patios, driveways, parking lots, storage areas, concrete or asphalt paving, and gravel roads. (Washington Department of Ecology, 1992).

**impounded:** Refers to a body of water such as a pond, lake, or river that has been confined by a dam, dike, floodgate, or other barrier. (Texas Environmental Center, 1991)

**incidence rate of disease:** The number of new cases of a disease or condition in a given period of time in a specified population.

**indoor air:** The breathable air inside a habitable structure or conveyance. (EPA, December 1997)

**indoor air pollution:** Chemical, physical, or biological contaminants in indoor air. (EPA, December 1997)

**industrial waste:** Process waste associated with manufacturing. This waste usually is not classified as either municipal waste or RCRA hazardous waste by federal or state laws. (EPA, OSWER, October 1988)

**industrial non-hazardous waste:** Process waste associated with generation of electric power and manufacture of materials such as pulp and paper, iron and steel, glass, and concrete. This waste usually is not classified as either municipal waste or hazardous waste by federal or state laws.

**infant mortality:** The death of children in the first year of life.

**inland wetlands:** Wetlands that include marshes, wet meadows, and swamps. These areas are often dry one or more seasons every year. In the arid West of the U.S., they may be wet only periodically.

**integrated pest management:** The coordinated use of available pest-control methods to prevent unacceptable levels of pest damage by the most economical means and with the least possible hazard to people, property, and the environment.

**invasive species/invasive nuisance species:** See nonnative species.

**inversion:** The condition that occurs when warm air is trapped near the ground and normal temperature gradients don't permit air to flow into the atmosphere. (Nadakavukaren, 2000).

## J

**Julian day (JD):** A Julian day is a continuous count of days beginning with January 1, 4713 BC. Julian days are often used by astronomers and sometimes used by historians to provide a precise date for an event, independent of all calendar systems. The date 4713 BC was chosen for the start of the count because this was earlier than all known historical records and happened to be a convenient starting point for several chronological and astronomical cycles. The length of the year in the Julian calendar is exactly 365.25 Julian days.

# K

**keystone species:** A species that interacts with a large number of other species in a community. Because of the interactions, the removal of this species can cause widespread changes to community structure. (Pidwirny, 2000-2001)

# L

**lagoons (for waste treatment):** Water impoundments in which organic wastes are stored, stabilized, or both. A shallow, artificial treatment pond where sunlight, bacterial action, and oxygen work to purify wastewater; a stabilization pond. An aerated lagoon is a treatment pond that uses oxygen to speed up the natural process of biological decomposition of organic wastes. (EPA, August 2002)

**land cover:** The ecological status and physical structure of the vegetation on the land surface. (NRC, 2000)

**land use:** Describes how a piece of land is managed or used by humans. The degree to which the land reflects human activities (e.g., residential and industrial development, roads, mining, timber harvesting, agriculture, grazing, etc.).

**landfills:** 1. Sanitary landfills: Disposal sites for nonhazardous solid wastes spread in layers, compacted to the smallest practical volume, and covered by material applied at the end of each operating day. 2. Secure chemical landfills: Disposal sites for hazardous waste, selected and designed to minimize the chance of release of hazardous substances into the environment.

**landscape:** The traits, patterns, and structure of a specific geographic area, including its biological composition, its physical environment, and its anthropogenic or social patterns. An area where interacting ecosystems are grouped and repeated in similar form. (EPA, December 1997)

**landscape condition:** The extent, composition, and patterns of habitats in a landscape.

**landscape pattern:** The spatial distribution of the land use/land cover types, the arrangement of patches, connectivity among patches, and corridors for movement.

**large urban and built-up areas:** A National Resources Inventory land cover/use category composed of developed tracts of at least 10 acres, meeting the definition of *urban and built-up areas*. (USDA, NRCS, 2000)

**large-quantity generators:** Businesses that generate substantial "RCRA hazardous waste" as a part of their regular activities.

**leaching:** The process by which soluble materials in the soil, such as nutrients, pesticide chemicals, or contaminants, are washed into a lower layer of soil or are dissolved and carried away by water. (Texas Environmental Center, 1991)

**lead:** A heavy metal used in many materials and products. It is a natural element and does not break down in the environment. When absorbed into the body, it can be highly toxic to many organs and systems.

**levee:** A natural or manmade earthen barrier along the edge of a stream, lake, or river. Land alongside rivers can be protected from flooding by levees.

**lichen:** Any of numerous complex thallophytic plants made up of an alga and a fungus growing in symbiotic association on a solid surface (e.g., a rock).

**life expectancy:** The probable number of years (or other time period) that members of a particular age class of a population are expected to live, based on statistical studies of similar populations in similar environments.

**life expectancy (at birth):** The average number of years that a group or cohort of infants born in the same year are expected to live.

**low birthweight:** Refers to children born weighing less than 2,500 grams (5.5 pounds).

**low-level waste:** Radioactive waste, including accelerator-produced waste, that is not high-level radioactive waste, spent nuclear fuel, transuranic waste, byproduct material (as defined in the Atomic Energy Act of 1954), or naturally occurring radioactive material.

# M

**macroinvertebrate:** An organism that lacks a backbone and can be seen with the naked eye. (EPA, OW, November 2002).

**malignant melanoma:** A type of skin cancer, more often fatal than other types of skin cancer.

**media:** Specific environments—air, water, soil—that are the subject of regulatory concern and activities. (EPA, December 1997)

**medical waste:** Any solid waste generated during the diagnosis, treatment, or immunization of human beings or animals, in research, production, or testing.

**mercury:** Mercury is a metallic element that occurs in many forms and in combination with other elements. When combined with carbon, which readily occurs in water, it forms more-bioavailable organic mercury compounds (e.g., methylmercury).

**mesotrophic:** Pertaining to a lake or other body of water characterized by moderate nutrient concentrations and moderate productivity in terms of aquatic animal and plant life.

**metabolic rate:** The rate at which the body can turn food into energy.

**metabolites:** Compound that result from human digestion (metabolism) of contaminants and that serve as a biomarkers of exposure.

**metadata:** Information about data. It describes the content, quality, condition, and other characteristics of data.

**methemoglobinemia:** A rare but potentially fatal condition in infants that results from interferences in the blood's ability to carry oxygen. Nitrates in drinking water are associated with methemoglobinemia (also known as "blue baby syndrome").

**metropolitan area:** A Metropolitan Area (MA) is a U.S. Census Bureau construct that consists of an area comprising a core with a large population nucleus, together with adjacent communities that have a high degree of economic and social integration with that core. Each MA must contain either a place with a minimum population of 50,000 or a Census Bureau-defined urbanized area and a total MA population of at least 100,000 (75,000 in New England). The area is defined by county boundaries. (U.S. Census Bureau, 2001)

**microorganisms:** Tiny life forms that can be seen only with the aid of a microscope. Some microorganisms can cause acute health problems when consumed; also known as microbes. (EPA, OGWDW, November 2002)

**Mid-Atlantic Highlands:** A region that encompass 79,000 square miles and extends east to west from the Blue Ridge Mountains in Virginia to the Ohio River, and north to south from the Catskill Mountains to the North Carolina-Tennessee-Virginia border

**mixed low-level waste:** Low-level radioactive waste that also contains hazardous constituents. (DOE, December 1999)

**mobile sources:** Moving objects that release pollution from combustion of fossil fuels, such as cars, trucks, buses, planes, trains, lawn mowers, construction equipment, and snowmobiles. Some mobile sources, such as some construction equipment or movable diesel generators, are called nonroad sources, because they are usually operated off road.

**Monte Carlo analysis:** A computer-based statistical tool—drawing on various probabilistic techniques—that is used to help quantify variability and uncertainty inherent to risk assessment.

**morbidity:** Sickness, illness, or disease that does not result in death.

**mortality:** Death; death rate, the proportion of the population who die of a disease, often expressed as a number per 100,000.

**municipal solid waste:** Waste discarded by households, hotels/motels, and commercial, institutional, and industrial sources. It typically consists of everyday items such as product packaging, grass clippings, furniture, clothing, bottles, food scraps, newspapers, appliances, paint, and batteries. It does not include waste water.

# N

**National Ambient Air Quality Standards:** Standards established by EPA under the Clean Air Act that apply to outdoor air throughout the country (see *criteria pollutants*). (EPA, December 1997)

**nematodes:** Simple worms consisting of an elongate stomach and reproduction system inside a resistant outer cuticle (outer skin). (USDA, 2001)

**net primary production:** Gross primary production minus all sources of plant respiration. Represents the carbon or biomass that is available to other organisms, providing the base of the food web.

**nitrate:** The primary chemical form of nitrogen in most aquatic systems; occurs naturally; a plant nutrient and fertilizer; can be harmful to humans and aninmals.

**nitric oxide (NO):** A gas formed by combustion under high temperature and high pressure in an internal combustion engine; it is converted by sunlight and photochemical processes in ambient air to nitrogen oxide. NO is a precursor of ground-level ozone pollution, or smog. (EPA, December 1997)

**nitrogen dioxide ($NO_2$):** The result of nitric oxide combining with oxygen in the atmosphere; major component of photochemical smog. (EPA, December 1997)

**nitrogen export:** The annual quantity of total nitrogen produced by nitrogen sources in a watershed that leaves the watershed through a river or stream that connects to other watersheds downstream

**nitrogen oxide ($NO_X$):** The result of photochemical reactions of nitric oxide in ambient air; major component of photochemical smog. Product of combustion from transportation and stationary sources and a major contributor to the formation of ozone in the troposphere and to acid deposition. (EPA, December, 1997)

**noncommunity water system:** A public water system that is not a community water system. Nontransient noncommunity water systems are those that regularly supply water to at least 25 of the same people at least six months per year but not year-round (e.g., schools, factories, office buildings, and hospitals that have their own water systems). Transient noncommunity water systems provide water in a place where people do not remain for long periods of time (e.g., a gas station or campground).

**nonhazardous waste:** See *solid waste*.

**nonisolated intermediaries:** An intermediate compound in a chemical manufacturing process that can be a by-product or can be released as a result of the process.

**nonnative species:** A species that has been introduced by human action, either intentionally or by accident, into areas outside its natural geographical range. Other names for these species include alien, exotic, introduced, and nonindigenous.

**nonpoint source pollution:** Pollution that occurs when rainfall, snowmelt, or irrigation water runs over land or through the ground, picks up pollutants, and deposits them into rivers, lakes, coastal waters, or ground water. Types of pollution include sediments, nutrients, pesticides, pathogens (bacteria and viruses), toxic chemicals, heavy metals that runoff from agricultural land, urban development, and roads.

**noxious algae:** Toxic algae commonly associated with harmful algae blooms such as red tides.

**nutrient:** Any substance assimilated by living things that promotes growth. The term is generally applied to nitrogen and phosphorus, but is also applied to other essential and trace elements.

**nutrient enrichment:** See *eutrophication*.

**oil and gas production wastes:** Drilling fluids, produced waters, and other wastes associated with the exploration, development, and production of crude oil or natural gas that are conditionally exempted from regulation as hazardous wastes.

**oligotrophic:** Pertaining to a lake or other body of water characterized by extremely low nutrient concentrations, often with very limited plant growth but with high dissolved-oxygen levels.

**organic matter:** Plant and animal material that is in the process of decomposing. When it has fully decomposed, it is called "humus." This humus is important for soil structure because it holds individual mineral particles together in clusters. (USDA, NRCS, 2000)

**organophosphate:** Pesticides that contain phosphorus; short-lived, but some can be toxic when first applied. (EPA, December, 1997)

**outer boundary:** In reference to the body, includes skin and body openings.

**ozone ($O_3$):** A very reactive form of oxygen that is a bluish irritating gas of pungent odor. It is formed naturally in the atmosphere by a photochemical reaction and is a beneficial component of the upper atmosphere. It is also a major air pollutant in the lower atmosphere, where it can form by photochemical reactions when there are conditions of air pollutants, bright sunlight, and stagnant weather.

**ozone depletion:** Destruction of the stratospheric ozone layer, which shields earth from ultraviolet radiation harmful to life. This destruction of ozone is caused by the breakdown of certain compounds that contain chlorine, bromine, or both (chlorofluorocarbons or halons), which occurs when they reach the stratosphere and then catalytically destroy ozone molecules. (EPA, December 1997)

**ozone hole:** A well-defined, large-scale area of significant thinning of the ozone layer. It occurs over Antarctica each spring.

**ozone layer:** The protective stratum in the atmosphere, about 15 miles above the ground, that absorbs some of the sun's ultraviolet rays, thereby reducing the amount of potentially harmful radiation that reaches earth's surface. (EPA, December 1997)

**ozone precursors:** Chemicals that contribute to the formation of ozone.

# P

**particulate matter:** Solid particles or liquid droplets suspended or carried in the air (e.g., soot, dust, fumes, mist). (EPA, OAR, October 2002)

**passive smoking:** Exposure to tobacco smoke, or the chemicals in tobacco smoke, without actually smoking. It usually refers to a situation where a nonsmoker inhales smoke emitted into the environment by other people smoking. This smoke is known as "environmental tobacco smoke" (ETS). (National Public Health Partnership, 2000)

**pastureland:** A National Resources Inventory land cover/use category of land managed primarily for the production of introduced forage plants for livestock grazing. Pastureland cover may consist of a single species in a pure stand, a grass mixture, or a grass-legume mixture. For the NRI, it includes land that has a vegetative cover of grasses, legumes, and/or forbs, regardless of whether or not it is being grazed by livestock. (USDA, NRCS, 2000).

**pathogen:** Microorganism (e.g., bacteria, viruses, or parasites) that can cause disease in humans, animals, and plants. (EPA, December 1997)

**periphyton:** Microscopic underwater plants and animals that are firmly attached to solid surfaces such as rocks, logs, and pilings. (EPA, December 1997)

**persistent organic pollutants:** Chemicals that endure in the environment and bioaccumulate as they move up trough the food chain. They include organochlorine pesticides, polychlorinated biphenyls (PCBs), dioxins, and furans.

**pesticides:** Any substance or mixture of substances intended to prevent, destroy, repel, or mitigate any pest. Pests can be insects, mice and other animals, unwanted plants (weeds), fungi, or microorganisms such as bacteria and viruses. Though often misunderstood to refer only to insecticides, the term "pesticide" also applies to herbicides, fungicides, and various other substances used to control pests. Under U.S. law, a pesticide is also any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant.

**phosphorus:** An essential chemical food element that can contribute to the eutrophication of lakes and other water bodies. Increased phosphorus levels result from discharge of phosphorus-containing materials into surface waters. (EPA, December 1997)

**photosynthesis:** The manufacture by plants of carbohydrates and oxygen from carbon dioxide mediated by chlorophyll in the presence of sunlight. (EPA, December 1997)

**phytoplankton:** That portion of the plankton community composed of tiny plants (e.g. algae, diatoms). (EPA, December 1997)

**playas:** Areas at the bottom of undrained desert basins that are sometimes covered with water. (EPA, OWOW, July 2002)

**$PM_{2.5}$:** Fine particles that are less than or equal to 2.5 micrometers in diameter.

**$PM_{10}$:** Particles less than or equal to 10 micrometers in diameter.

**point source pollution:** Effluent or discharges directly from a pipe into a waterway (e.g., from many industries and sewage treatment plants).

**pollutant:** Generally, any substance introduced into the environment that adversely affects the usefulness of a resource or the health of humans, animals, or ecosystems. (EPA, December 1997)

**pollution:** Generally, the presence of a substance in the environment that, because of its chemical composition or quantity, prevents the functioning of natural processes and produces undesirable environmental and health effects. Under the Clean Water Act, for example, the term has been defined as the manmade or man-induced alteration of the physical, biological, chemical, and radiological integrity of water and other media. (EPA, December 1997)

**polychlorinated biphenyls (PCBs):** A group of synthetic chemicals that can exist as oily liquids and waxy solids. Due to their non-flammability, chemical stability, high boiling point and electrical insulating properties, PCBs were used in hundreds of industrial and commercial applications including electrical, heat transfer, and hydraulic equipment; as plasticizers in paints, plastics and rubber products; in pigments, dyes and carbonless copy paper, and many other applications. PCBs can produce toxic effects and are probable carcinogen. (EPA, OPPT, February 2003)

**pressure:** See *stressor*.

**prevalence of disease:** That part of the total population affected by a condition or disease.

**prevalence rate:** The total number of persons with a given disease or condition in a specified population at a specified period of time.

**production capacity:** Chlorophyll per unit area for terrestrial ecosystems (including wetlands and riparian areas) and per unit volume for aquatic ecosystems.

**productivity:** The rate at which ecosystems use energy (principally solar energy) to fix atmospheric carbon dioxide. (NRC, 2000)

# R

**radioactive waste:** Garbage, refuse, sludge, and other discarded material, including solid, liquid, semisolid, or contained gaseous material that must be managed for its radioactive content (DOE, July 1999). Types of radioactive waste include high-level waste, spent nuclear fuel, transuranic waste, low-level waste, mixed low-level waste, and contaminated media.

**radon (Rn-222):** A naturally occurring radioactive gas that has no color, odor, or taste and is chemically inert. Radon comes from the radioactive decay of uranium in soil, rock, and ground water and is found all over the U.S. It has a half-life of 3.8 days, emitting ionizing radiation (alpha particles) during its radioactive decay to several radioactive isotopes known as "radon decay products." It gets into indoor air primarily from soil under homes and other buildings. Radon is a known human lung carcinogen and represents the largest fraction of the public's exposure to natural radiation.

**rangelands:** A National Resources Inventory land cover/use category on which the climax or potential plant cover is composed principally of native grasses, grasslike plants, forbs or shrubs suitable for grazing and browsing, and introduced forage species that are managed like rangeland. This would include areas where introduced hardy and persistent grasses, such as crested wheatgrass, are planted and such practices as deferred grazing, burning, chaining, and rotational grazing are used, with little or no chemicals or fertilizer being applied. Grasslands, savannas, many wetlands, some deserts, and tundra are considered to be rangeland. Certain communities of low forbs and shrubs, such as mesquite, chaparral, mountain shrub, and pinyon-juniper, are also included as rangeland. (USDA, NRCS, 2000).

**rare and at-risk species:** Rare species are those that are particularly vulnerable to both human-induced threats and natural fluctuations and hazards. At-risk species are those classified by the Association for Biodiversity Information as vulnerable or more rare.

**RCRA hazardous waste:** Applies to certain types of hazardous wastes that appear on EPA's regulatory listing (RCRA) or that exhibit specific characteristics of ignitability, corrosiveness, reactivity, or excessive toxicity.

**red tide:** A common name for the phenomenon where certain phytoplankton species contain reddish pigments and "bloom" such that the water appears to be colored red.

**regional and continental areas:** Heterogeneous areas at regional (e.g, Southeast) and continental scales composed of a cluster or mosaic of interacting ecosystems. Regional and continental ecosystems are not characterized primarily by a dominant land cover type such as forests, farmlands, grasslands or urban areas, but rather include many or all these ecosystems at these larger spatial scales. Regional and continental ecosystems reflect the underlying landscape patterns at these larger scales.

**relative risk:** A measurement of the chance of contracting a disease in those who have been exposed to a risk factor compared with the risk for those who have not been exposed.

**remediation:** Cleanup or other methods used to remove or contain a toxic spill or hazardous materials from a contaminated site.

**reserved forest land:** Forested land withdrawn from timber utilization through statute, administrative regulation, or designation. (USDA, Forest Service, April 2001)

**richness:** A measure of species diversity, which usually decreases with impairment. It is based on the number of distinct taxa (at a level selected to identify, e.g., order, family, species); can be the total number of taxa, or the number in an identified group (e.g., number of mayfly taxa).

**rill:** A small channel eroded into the soil by surface runoff; can be easily smoothed out or obliterated by normal tillage. (EPA, December 1997)

**riparian area:** The area adjacent to streams and rivers, important as buffers to runoff. Many riparian areas include wetlands.

**riparian wetland:** A wetland along a stream or river.

**riparian zone:** A 30-meter buffer on each side of a stream or river.

**risk:** The probability that a health problem, injury, or disease will occur.

**risk factor:** A characteristic (e.g., race, sex, age, obesity) or variable (e.g., smoking, occupational exposure level) associated with increased probability of an adverse effect. (EPA, December 1997)

**runoff:** That part of precipitation, snowmelt, or irrigation water that runs off the land into streams or other surface water. It can carry pollutants from the air and land into receiving waters. (EPA, December 1997)

**rural transportation land:** A National Resources Inventory land cover/use category that consists of all highways, roads, railroads, and associated right-of-ways outside urban and built-up areas; including private roads to farmsteads or ranch headquarters, logging roads, and other private roads, except field lanes. (USDA, NRCS, 2000)

# S

**secondhand smoke:** See *environmental tobacco smoke*.

**sediment transport:** The movement of sediment in rivers and streams.

**sedimentation:** the process of forming or depositing sediment; letting solids settle out of wastewater by gravity during treatment.

**self-supplied water:** Water not drawn from the public water supply.

**silica:** An inorganic compound mined from the earth; has been found to be associated with lung cancer (Steenland, 1997). Silica is used in foundries, pottery making, brick making, and sand blasting.

**silviculture:** The science of producing and tending a forest; the theory and practice of controlling forest establishment, composition, and growth. (Matthews, 1989)

**sludge:** Solid, semisolid, or liquid waste generated from a municipal, commercial, or industrial waste water facility.

**small built-up areas:** A National Resources Inventory land cover/use category consisting of developed land units of 0.25 to 10 acres, which meet the definition of *urban and built-up areas*. (USDA, NRCS, 2000)

**smart growth:** The management of "urbanization" that seeks to serve the economy, the community, and the environment. Smart growth seeks to foster healthy communities, a clean environment, economic development and jobs, and strong neighborhoods with a range of housing options.

**softwood:** Coniferous trees, usually evergreen, that have needles or scale-like leaves. (USDA, Forest Service, November 2002)

**solid waste:** Nonliquid, nonsoluble materials ranging from municipal garbage to industrial wastes that contain complex and sometimes hazardous substances. Solid wastes also include sewage sludge, agricultural refuse, demolition wastes, mining residues, and liquids and gases in containers. (EPA, December 1997)

**species richness:** The absolute number of species in an assemblage or community.

**spent nuclear fuel:** Nuclear reactor fuel that has been used to the extent that it can no longer effectively sustain a chain reaction. (EPA, December 2002)

**spray drift:** The physical movement of a pesticide through air at the time of application, or soon thereafter, to any site other than that intended for application.

**sprawl:** See *urban sprawl*.

**squamous cell carcinoma:** A type of skin cancer, usually curable if treated in time.

**stationary source:** A place or object from which pollutants are released and that stays in one place. These sources include many types of facilities, including power plants, gas stations, dry cleaners, incinerators, factories, and houses.

**stressor:** A physical, chemical, or biological entity that can induce adverse effects on ecosystems or human health. (EPA, December 1997)

**submerged aquatic vegetation (SAV):** Rooted vegetation that grows under water in shallow zones where light penetrates. (EPA, CBP, October 2002)

**Superfund:** The program operated under the legislative authority of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Superfund Amendments and Reauthorization Act (SARA) that funds and carries out EPA solid waste emergency and long-term removal and remedial activities. These activities include establishing the National Priorities List, investigating sites for inclusion on the list, determining their priority, and conducting and/or supervising cleanup and other remedial actions. (EPA, December 1997)

**Superfund site:** Any land in the U.S. that has been contaminated by hazardous waste and identified by EPA as a candidate for cleanup because it poses a risk to human health, the environment, or both.

**surface eythemal:** Sun-burning UV radiation at earth=s surface.

**surface water:** Water in rivers, streams, lakes, ponds, reservoirs, estuaries, and wetlands (found at the surface, in contrast to ground water).

**sustainability:** Long-term management of ecosystems to meet the needs of present human populations without interruption, weakening, or loss of the resource base for future generations. (Environment Canada, 1997)

# T

**thermoelectric water use:** Use of water for cooling in the generation of electric power.

**threatened and endangered species:** Those species that are in danger of extinction throughout all or a significant portion of their range or are likely to become endangered in the future. (Grondahl, et al, July 1997)

**threshold:** 1.The lowest dose of a chemical at which a specified measurable effect is observed and below which it is not observed. 2.The dose or exposure level below which a significant adverse effect is not expected. (EPA, December 1997)

**timber land:** Forest land that is capable of producing crops of industrial wood (at least 20 cubic feet per acre per year in natural stands) and not withdrawn from timber use by statute or administrative regulation. (USDA, Forest Service, April 2001)

**total off-site releases:** The total annual amount (in pounds) of a toxic chemical transferred from a facility to publicly owned treatment works (POTW) or to an off-site location (non-POTW). (EPA, TRI, November 2002)

**total on-site releases:** The total annual release quantities (in pounds) of a chemical to air, water, on-site land, and underground injection wells. (EPA, TRI, November 2002)

**Toxics Release Inventory (TRI):** A publicly available EPA database that contains information on toxic chemical releases and other waste management activities reported annually by certain covered industries and federal facilities. TRI was established under the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) and expanded by the Pollution Prevention Act of 1990. (EPA, TRI, December 2002)

t**oxic substance:** Any substance that presents a significant risk of injury to health or the environment through exposure.

**toxic waste:** A waste that can produce injury if inhaled, swallowed, or absorbed through the skin. (EPA, December 1997)

**transuranic waste:** A category of radioactive waste. It contains elements that have atomic numbers higher than uranium (92), such as plutonium; results primarily from past nuclear weapons production and cleanup of nuclear weapons facilities.

**trophic status:** Classification of a lake or water body as eutrophic, oligotrophic, mesotrophic, or hypertrophic.

**troposphere:** The layer of the atmosphere closest to the earth's surface. (EPA, December 1997)

# U

**ultraviolet (UV) radiation** Radiation from the sun that can be useful or potentially harmful. UV radiation from one part of the spectrum (UV-A) enhance plant life. UV radiation from other parts of the spectrum (UV-B) can cause skin cancer or other tissue damage. The ozone layer in the atmosphere partly shields earth from UV radiation reaching the surface. (EPA, December 1997)

**underground storage tanks:** Tanks and their underground piping that have at least 10 percent of their combined volume underground.

**urban and built-up areas:** A National Resources Inventory land cover/use category consisting of residential, industrial, commercial, and institutional land construction sites; public administrative sites; railroad yards; cemeteries; airports; golf courses; sanitary structures and spillways; small parks (less than 10 acres) within urban and built-up areas; and highways, railroads, and other transportation facilities if they are surrounded by urban areas. Also included are tracts of less than 10 acres that do not meet the above definition but are completely surrounded by urban and built-up land. (USDA, NRCS, 2000)

**urbanized areas (UAs) and urban clusters (UCs):** Densely settled areas consisting of core census block groups that have a population density of at least 1,000 people per square mile and other surrounding census blocks that have an overall density of at least 500 people per square mile. UAs contain 50,000 or more people; UCs contain at least 2,500 people but fewer than 50,000. (U.S. Census Bureau, 2001)

**urban and suburban areas:** Places where the land is primarily devoted to buildings, houses, roads, concrete, grassy lawns, and other elements of human use and construction. Urban and suburban areas, in which about three-fourths of all Americans live, span a range of density, from the city center–characterized by high-rise buildings and little green space–to the suburban fringe–where development thins to a rural landscape. This definition does not include all developed lands, for example, small residential zones, the area of rural interstate highways, farmsteads, and the like, which are "developed but are not sufficiently built up to be considered "urban or suburban." (The Heinz Center, 2002)

**urbanization:** The concentration of development in relatively small areas (cities and suburbs). The U.S. Census Bureau defines "urban" as areas with densities of people above 1.5 people per acre.

# V-Z

**vehicle miles traveled:** A measure of the extent of motor vehicle operation; the total number of vehicle miles traveled by all vehicles within a specific geographic area over a given period of time. Vehicle miles traveled and other variables are used to estimate air pollutant emissions.

**vernal pools:** Seasonal wetlands that occur under the Mediterranean climate conditions of the West Coast. They are covered by shallow water for variable periods from winter to spring but may be completely dry for most of the summer and fall. These wetlands range in size from small puddles to shallow lakes and are usually found in a gently sloping plain of grassland. Beneath vernal pools lies either bedrock or a hard clay layer in the soil that helps keep water in the pool.

**volatile organic compounds:** Chemicals, such as gasoline and perchloroethylene (a dry cleaning solvent) that contain carbon and vaporize readily.

**waste minimization priority chemicals:** A group of 30 chemicals—3 metals (lead, mercury, and cadmium) and 27 organic compounds—identified as the highest priority for reduction in industrial and hazardous waste.

**water clarity:** A measure of how clear a body of water is; measured in the distance light penetrates into the water.

**water quality criteria:** Levels of water quality expected to render a body of water suitable for its designated use. Criteria are based on specific levels of pollutants that would make the water harmful if used for drinking, swimming, irrigation, fish production, or industrial processes. (EPA, December 1997)

**water quality standards:** State-adopted and EPA-approved ambient standards for water bodies. The standards define the water quality goals of a water body by designating the uses of the water and setting criteria to protect those uses. The standards protect public health and welfare, enhance the quality of the water, and provide the baseline for surface water protection under the Clean Water Act.

**waterborne disease outbreak:** is defined as an event in which (1) more than two persons have experienced an illness after either the ingestion of drinking water or exposure to water encountered in recreational or occupational settings, and (2) epidemiologic evidence implicates water as the probable source of illness.

**watershed:** An area of land from which all water that drains from it flows to a single water body.

**wetland ecosystems:** Areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas.